

through the gum in the form of the point of a flattened cone, which is coated with enamel, and downwards towards the jaw, increasing in breadth, but not in thickness, till it is imbedded in the substance of the jaw itself. The lower portion has no enamel; the number of teeth is, as described by Dr. Roxburgh, 120.

*Description of an Acid Principle prepared from the Lithic or Uric Acid.* By William Prout, M.D. Communicated by W. H. Wollaston, M.D. F.R.S. Read June 11, 1818. [*Phil. Trans.* 1818, p. 420.]

The object of this paper is to show that the purple substance obtained by heating a mixture of the lithic and nitric acids, is a compound of ammonia with a peculiar acid principle, which the author proposes to call Purpuric Acid, a term suggested by its peculiar tendency to form red or purple compounds.

The purpuric acid is obtained by digesting pure lithic acid in dilute nitric acid, neutralizing the excess of the latter by ammonia, and evaporating till granular crystals, consisting of purpurate of ammonia, separate. The ammonia is removed by sulphuric or muriatic acid, and the purpuric acid thus obtained in a free state.

The author next points out the characters of this acid. It is very sparingly soluble in water, and insoluble in alcohol and ether. In the mineral acids, and in the alkalis, it readily dissolves. It is insoluble in dilute sulphuric, muriatic, phosphoric, oxalic, citric, and tartaric acids. When heated it neither melts nor sublimes, but becomes purple, from the production of ammonia, and then burns gradually without any particular odour. It unites with the metallic oxides; and when aided by heat, expels carbonic acid from the alkaline carbonates. It does not unite with any other acid. Upon these characters the author thinks that its properties, as an acid, are sufficiently established.

Dr. Prout then proceeds to describe its compounds with different bases, which, with few exceptions, are of a purple or reddish colour: he thinks that some of them might be used as pigments, or employed in the art of dyeing.

*Astronomical Observations and Experiments, selected for the purpose of ascertaining the relative Distances of Clusters of Stars, and of investigating how far the Power of our Telescopes may be expected to reach into Space, when directed to ambiguous Celestial Objects.* By Sir William Herschel, Knt. Guelp. LL.D. F.R.S. Read June 11, 1818. [*Phil. Trans.* 1818, p. 429.]

Having shown in a former paper that by an equalization of the light of stars of different brightness, their relative distances from the observer in the direction of the line in which they are seen may be ascertained, and having deduced from this equalization a method of turning the space penetrating power of a telescope into a gradually

increasing series of gauging powers, by which the profundity in space of every object consisting of stars can be ascertained, as far as the light of the instrument will reach, Sir William Herschel proceeds to make use of some of his numerous observations made upon those occasions, to show how the distances of globular and other clusters of stars may be obtained, and has represented their situations in space by a figure, in which their distances are made proportional to the diameter of a globular space, sufficiently large to contain all the stars that are visible to the eye of an observer in the clearest nights.

The author then details a series of observations of clusters of stars, from which the order of their profundity in space is determined, and describes the manner in which he represents the profundity of celestial objects in space by diagrams; and in the concluding section of his paper, considers the extent of the power of telescopes to reach into space when they are directed to ambiguous celestial objects.

*On the Structure of the Poisonous Fangs of Serpents.* By Thomas Smith, Esq. F.R.S. Read June 4, 1818. [*Phil. Trans.* 1818, p. 471.]

The object of this paper is to explain the existence of a slit in the fangs of serpents, extending from the foramen at the base to the aperture near the point, and to show that this slit is caused by the manner in which the tube through which the poison flows is formed. After describing the growth of the teeth of poisonous serpents, the author observes, that in those which are not venomous, there are no traces of any furrow or depression.

A drawing, illustrating the author's description, is annexed to this paper.

*On the Parallax of a Aquilæ.* By John Pond, F.R.S. Astronomer Royal. Read April 16, 1818. [*Phil. Trans.* 1818, p. 477.]

The telescope erected for this investigation resembles in its construction that which was formerly used for the observations of  $\alpha$  Cygni. It has an achromatic object-glass of 10 feet focal length, and 4 inches diameter.

The Astronomer Royal had first selected  $\beta$  Canis Minoris as a proper star to be compared with  $\alpha$  Aquilæ; but finding, upon trial, that it could rarely be seen in the day-time, he was induced to substitute  $\lambda$  Pegasi. Not being quite satisfied of the stability of the instrument, the author has only computed those observations in which each star was observed in the same day, and in the short interval of three hours; so that it was not likely any sensible change in the telescope should have taken place. The result of fifty-four observations between the 25th of July and the 29th of December 1817, afforded no appearance of parallax; indeed the author considering it as a hopeless task to establish its existence by observations on a star so far from the zenith, was about to abandon the subject, when his at-